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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/899,156	07/06/2001	Nagahisa Watanabe	210854US2S	2834

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EXAMINER

PATEL, ISHWARBHAI B

ART UNIT

PAPER NUMBER

2827

DATE MAILED: 08/14/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/899,156

Applicant(s)

WATANABE, NAGAHISA

Examiner

Ishwar (I. B.) Patel

Art Unit

2827

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on April 30, 2002, paper No. 6.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 5 and 7-13 is/are pending in the application.
- 4a) Of the above claim(s) 7-13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Election/Restrictions

1. Applicant's election of group I, claims 1-6, in Paper No. 6 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
3. Claims 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is not clear what the applicant mean by "first plating layer is conductive substrate".

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burgess, US Patent No. 4,642,160 in view of Gorrell et al., US Patent No. 5,747,358.

Regarding claim 1, Burgess discloses a printed wiring board, comprising:

an insulating layer having a first surface and a second surface located on the opposite side of said first surface; a plurality of wiring layers formed so as to correspond to a predetermined circuit pattern, said layers being laminated at least on said first surface and said second surface of said insulated layer (printed circuit board with wiring layer on top and bottom, see figure 9);

a via formed on said insulating layer, said via having one end opened on said first surface of said insulating layer and the other end closed by said wiring layer laminated on a part of said insulating layer other than said first surface (via 40 open at one end and the other end is closed by internal wiring layer, see figure 9);

a first plating layer, said first plating layer continuously covering said inner surface of said via, said wiring layer exposed within said via and that portion of the wiring layer which is formed on said first surface and which face one end of said via (plating layer 38, see figure 8 and); except

a second plating layer, said second plating layer being laminated on said first plating layer, electrically connecting said wiring layer formed on said first surface and said wiring layer laminated on the part of said insulating layer other than said first surface by cooperating with said first plating layer. However the applying a second plating layer is known in the art for getting the desired thickness of the conductive material or to coat the via and pad with noble metal to have better electrical connection to avoid corrosion. Gorrell disclose such additional plating, see Gorrell, via 40, figure 16, column 7, line 54 to column 8, line 15. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide circuit board of Burgess with a second plating layer as taught by Gorrell in order to get the desired thickness to have a robust surface.

Regarding claim 2, the first plating layer is formed on the first surface of the insulator with wiring; therefore it is inherently a conductive substrate.

Regarding claim 5, the modified assembly of Burgess further discloses the said wiring layer is formed inside said insulating layer, see figure 9.

Regarding claim 3, though Burgess does not explicitly disclose whether the insulated layer has flexibility or not, it depend upon the core material used for the circuit and Burgess disclose that any material with adequate physical and dielectric strength may be used. Further, the use of flexible substrate is known in the art for the apparent

reason of flexibility during installation and the operation. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide circuit board of Burgess with the insulation layer with flexibility in order to have the flexibility for better installation and operation.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Tamura et al., Yasuda et al., Petefish, L. J. Quintana, Ishikawa et al., Oda, Yang et al., Murayama, Sakemura et al., disclose the circuit board with blind via similar to applicant's claimed invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ishwar (I. B.) Patel whose telephone number is (703) 305 2617. The examiner can normally be reached on M-F (6:30 - 4) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David L Talbott can be reached on (703) 305 9883. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305 3431 for regular communications and (703) 305 7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308 0956.

ibp
August 7, 2002


KAMAND CUNEO
PRIMARY EXAMINER